THE

AGRICULTURAL MUSEUM.

OMNIS FERET OMNIA TELLUS. VIRG.

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UPON THE CULTURE OF HEMP.

Translated from the Treatise of Mons. du Hamel du Monceau.

(Concluded.)

The brake resembles a joist five or six inches square and seven or eight feet long, with two large slits of at least an inch broad sawed out from one end to the other, and the three longest or separate parts, formed by the two slits made into the shape of a knife. Upon this piece of wood is placed another which is connected with it at one end by a turning joint, and which at the other end affords a handle, and between the two ends bears two knives or iron plates, which go into the slits or mortises of the lower piece.

The man who uses the brake, takes a handful of hemp in his left hand, and in his right the handle of the upper jaw of the brake; he then places the hemp between the two chaps, and by repeatedly and forcibly raising and lowering the uppermost he breaks the stalks, and, drawing them through both, he forces the pulp from the filament; and when one half of it is thus broken, he takes that in his hand to pursue the same course with the other end. At length, when they have well broken about two pounds of hemp, they double it in the middle and twist the two ends strongly towards each other. This is called hemp ends, or coarse hemp.

The two methods, that of breaking with the hand, and that in which the brake is used, have each their advantages and defects, as we shall in course point out.

It has been frequently said that the hemp intended for the fabrick of fine cloths should be more rotted than

that destined to a coarser fabrick; and that that designed for cordage should be the least rotted.

We have already remarked, that hemp not sufficiently rotted was hard, thick, elastic, and remained clogged with parts of the stalk. We shall hereafter find these to be great defects when applied to the fabrick of cordage. We however acknowledge that hemp used in the finer fabricks may be a little more rotted, but it cannot be expected to render much finer a thread naturally coarse. It would rather be injured by putridity; for to have a fine thread the concurrence of many things are necessary.—First—The soil; for as above observed, too strong or dry a soil never yields a very pliant thread. It is too ligneous, consequently hard and brittle. On the other hand, if the soil is too humid, the bark which it will produce will be too herbaceous, tender, and liable to break, and become refuse, or heads of hemp. It is only the soft, substantial, and moderately moist grounds that give to the thread softness, flexibility, and strength, which are the best qualities of good hemp.

Secondly—The year. For when the seasons are dry and parching, the thread is hard. On the contrary, when the seasons are cool and moist, it is supple and sometimes tender.

Thirdly—The state of maturity. For if the hemp has been left standing too long, the longitudinal fibres of the bark adhere too strongly to one another; the coarse threads are connected like ribbands, and are with difficulty separated, especially at their lower extremities; which is understood when they say "a cue of hemp has many claws." This defect is found in all the female hemp that they have been obliged to leave too long in the ground in order to ripen its seed. Whereas if it is gathered in too green a state, the bark being yet herbaceous, great waste ensues, and the thread is without strength.

Fourthly—The manner of sowing the hemp. For that which is sown too thin has a thick, hard, ligneous,

and knotty bark ; whereas that which is sown thick, has a fine and smooth bark.

Lastly—The preparations it undergoes after it is gathered ; such as breaking, swingling, combing, &c. &c.

The preceding article on the culture of Hemp, and an article on the same subject, in No. 15, Page 229, have been deemed of so much importance, as to be sent to this country from Europe, by one of our public Functionaries. They are evidently, however, adapted to different climates, and disagree in several particulars.—To mention no other instance, the one recommends the sowing of the seed between the 20th of May, and the end of June, whereas the other directs that it be sown in the course of April. If this latter period is not a mistake in the original writer, it is certainly too early in the season for by far the greater part of the United States. There are many skillful cultivators of Hemp in Pennsylvania, Maryland, Virginia, Kentucky, &c. of whom some have published, for the information of their Fellow-Citizens, the result of their observations and experience, and the Editor is happy to have it in his power to extract from the Federal Gazette of Baltimore, a short piece, which may be read with profit in connection with those mentioned, above.

HEMP.

The increasing cultivation of Tobacco in Germany, France and other parts of Europe, must lessen the demand from our country ; and consequently induce the cultivators of that article to turn their attention to some other production. Wheat, Barley, Rye, &c. will always be in demand, for exportation, or the distillery We have also Flax and Hemp, necessary articles for internal manufactories. Flax is but a precarious crop, whereas Hemp seems the most certain of any spring crop, as well as the most profitable. The soil for Hemp should be

rich, light, deep and moist; but not spouty, or wet. Land that bears strong Tobacco, will produce good Hemp. Old ground well manured brings the heaviest crops, for according to the strength of the soil, will the produce be, from 5 or 6 to 12 or 15 cwt.

The season for sowing Hemp in our latitude, is from the beginning of May, to the last of June. It is necessary that the ground intended, should be in the best order, early in May, that the first favorable season that offers, for sowing the seed may be embraced. This is previous to a warm rain, or as soon after, as the ground will admit. When this is in fit order, and weather warm, as few seeds vegetate quicker, it will appear in 48 or 60 hours, which not only preserves it from the birds, but by its spreading leaf shelters the soil from the scorching sun. Should a fit season for sowing, be protracted, it becomes necessary, by stirring, to keep the weeds under and the soil in order. The quantity of seed for an acre, when intended for cordage, is from one bushel to six pecks, according to the quality of the soil; the richest requiring the most seed, which prevents the Hemp from growing too high. But when Hemp is intended for domestic purposes, two bushels or even a little more is requisite, which renders the fibre fine, and little inferior to our country flax.

Hemp is male and female, in different plants. The Farina or dust, emitted from the flowers of the male plant, is necessary to impregnate the female flowers, to render the seed productive. The proper season for pulling, or what is far preferable, cutting the hemp, is from the beginning to the end of August.—This period is sufficiently ascertained, from the appearance of the male plants, as when nearly fit to cut the blossom becomes of a pale yellow colour, and emits, upon the least touch or motion, a dust, which in the morning, appears like a fog rising from the Hemp, and when this blossom and the upper leaves of the male begin to fall, the Hemp is fit to cut—which should be done close to the ground

by a hook formed for the purpose, of the best steel, and as broad as a sickle, but not so crooked, and the edge smooth, with a set of about an inch just where the shank is formed that runs into the handle, which sets the edge lower, and prevents the necessity of stooping too much in cutting the Hemp. In gathering, it is supported by the left arm and knee, and spread regularly on the ground, as is done with flax. In about six or eight days, if the weather prove dry, it is bound up in bundles, and carefully preserved from the weather, either in sheds or stacks, until about the middle of December; then carefully spread out on grass land. The time for rotting will depend on the weather. In an open and mild season it will be sooner affected, and should be examined towards the middle or end of February. When sufficiently rotted, it should be set up in stacks in the field; and when perfectly dry the hemp brake should be brought, and as one stack is broke it should be carried to another: this brake is generally about four feet and an half long; the pieces in front being about four inches apart, and an inch behind: As the Hemp passes through this brake it should be carried home, where it must pass through a flax brake; when, after the shives are cleared off, it is rolled or twisted up in handsfull, turning in the loose ends, and bound up strongly in two or three places into bundles of fifty or sixty pounds; then it is fit for market.

A top dressing of ashes or plaister will prove of considerable advantage to the crop.

The best and most convenient mode of raising seed is to drop a few grains in hills, about five or six feet apart, which may be done in the hills along with corn in planting. They should afterwards be thinned, leaving three or four in a hill; and when the male plants begin to decay, they should be cut out.

Pipe Creek, 14th March, 1811.

LUCUBRATION ON SOILS. No. 3.....

The third great shelf or region, we have called the hilly or tideless region,‡ which begins at a line drawn from the head of tide water, and extends to the foot of the mountains, presenting a very uneven surface, but by no means incapable of cultivation, and comprehending an immense range of soils, no less various than those in the alluvial region. Here the gravel of the alluvial region, has assumed the full size of what may without hesitation be called stone; and the marl which in the alluvial region, is found upwards of 20 feet under ground, may here be seen in many places consolidated into lime-stone and marble, shewing itself above the surface; the washing of ages having worn and carried away the soil that once covered them, to the depth in which marl is found. Here the complexion of the soil is no longer of that pale and faint colour, which is observable in the greater portion of the alluvial region, which is given to it by the coat of decayed vegetable matter, washed clay and sand which form its surface, and were deposited in the manner we have already described; but, in the hilly region, the greater part of this upper stratum has been washed away, and presents a surface that has been more deeply coloured with age. The colours are various according to circumstanes, and the strata which have been uncovered.

The silicious part of the soil in this region, instead of being found in a great state of division, as in fine sand and fine gravel, such as generally prevails in the alluvial region, and particularly in the first shelves of the land as we ascend from the mouths of the great rivers that empty into the ocean, here presents itself in a more concentrated state, in the form of large stones. The argil of this region is also more pure, that is, less mixed with other substances, more firm and frequently ochreous. These

‡ Mr. Volney and other naturalists, include it in the alluvial.

circumstances cause the soil to be of a firmer and more retentive quality, as is required by reason of its elevated and uneven surface.

Another trait which distinguishes this from the region we have denominated alluvial, is easily observable; I mean the size of the forest trees. In the alluvial region, more especially in the first division of the alluvial region, the soil is looser to a greater depth than in the hilly region, and therefore the roots of the trees can penetrate more easily, and to a much greater depth than in the hilly region, where the first or upper strata, which by the laws of gravitation are generally the lightest, have in the course of ages been worn away with the rains and the torrents, and brought to the surface a soil more impenetrable, especially at a small depth under ground. Besides, the substratum in the hilly region, and particularly in the mountainous region, of which we shall speak in the sequel, is frequently rock of various kinds, chiefly sand stone, lime-stone, marble, schisus, and granite. These rocks in the hilly region are found but a few feet under ground, and frequently project above the surface. The trees, therefore, meeting with these obstacles, are not in general so large as in the alluvial region. In the vallies of this region, however, there frequently is found a soil of sufficient depth to admit of the growth of the largest trees. I do not wish to be understood, that the fertility of the soil in these regions, differs in proportion to the size of the forest trees.—No, it is a remarkable fact, that many tracts of country in the hilly region, that are covered with trees of slender and inferior dimensions to the trees generally found in the alluvial region, are extremely fertile in small grain; and in Virginia and Maryland, grow good Indian corn, though the stalk is not generally so large as in the alluvial region. The reason is that the soil is firmer, more impermeable and retentive, and yet not deficient in natural riches. The surface to a sufficient depth for the growth of grain, may, by being sufficiently pulverised by cultivation, be rendered completely adapted to the growth of grains, grass-

es and shrubbery, and all plants whose roots do not extend very deep, like the roots of forest trees. The rocks on which this soil is bedded, and which in this region project above the surface, are generally found in regular strata, and shew signs of having been deposited by the water, in ages when they were bathed by the ocean. The calcareous rocks, viz: Lime-stone and marble, appear to have been banks of marl, whose shells have had sufficient time to pulverize completely, and to agglutinate and petrify; they frequently show the remains and impression of shells, in their interior and exterior parts, and are stratified in the manner in which the sea makes her deposits. The schisti appear to be depositions of vegetable matter, brought down either by the rains and torrents, and collected in vallies, or deposited by the ocean in strata. The form and impression, and sometimes the remains of vegetables are frequently observed in slate and pit coal; and the other rocks mentioned, appear to result from the earthy deposits of the ocean. The order in which these deposits are made, is sometimes deranged by the convulsions of nature; but they would in general form a basis for the classification and division of the soils of this region. My opportunities are too few to enable me to trace them with any precision, or to shew with sufficient clearness, the places which these respective rocks generally occupy in this region. But as nature acts upon invariable laws, with uniform regularity, there is no doubt that it may be done, and will be done, as soon as agriculture becomes an object of the first importance with the naturalist and the lovers of Science.

In this region there is less pine, less cedar, less resinous wood of any kind, than in the region herein called alluvial; more oak, more kinds of oily nut trees, which generally have very hard wood; but these last are more frequent as you approach the mountainous region.

SYLVANUS.

WORMS IN FRUIT TREES.

From the Archives of Useful Knowledge.

The following paper appeared in New York in the year 1808, and the directions given have been tried with various success. Injurious insects are multiplying so fast among us, owing to the negligence of the farmers in destroying them, that any remedy, likely to succeed only partially, is worthy of attention.

The re-appearance of those armies of Caterpillars which infested, and even destroyed, so many of our fruit trees last summer, has this year induced me to make the following experiments:

1. On a young apple tree, at the bifurcation of the first limb, I made a moulding of clay mortar, (about 14 days ago.) On the 3d day, I observed an unusual commotion of the worms; and that they appeared weak, emaciated, and their bright colour much diminished, appearing of a foxy brown. Some of them attempting to descend, when they came to the projection of the clay, fell to the ground. Others, which I suppose had fallen, had re-ascended to the clay; but could not, or would not, pass it, though they appeared perfectly restored to their colour and size.

On the 5th day, I observed that their excrements, which before had seemingly filled the nest, had disappeared. On the 7th day, the nest also had disappeared, and the worms almost gone, except some dead ones, and a few small, emaciated ones, which were scarcely able to move. On the 9th, the clay being very dry, some fresh looking worms had made a lodgment on the clay, and formed a new web over it. These I displaced, and gave the moulding a coat of fresh mud. They are now entirely gone.

2. On a cherry tree in my meadow, where a vast number of those vermin had nested, and devoured all the leaves, I placed a sod, so as to encompass the trunk, and be supported by the first limb. On the 7th day, the nest

remained entire, but filled with dead worms, and but two or three living ones on the tree.

3. On a tree, similar to the last, I placed a sod in the bifurcation of the first limb, without making it to encompass either limb or trunk: on the 7th day, the worms on this were dead likewise.

4. Not satisfied with the foregoing unexpected results, as in the last experiment, I placed a sod, with the earth downwards, (as was the case before) in the second bifurcation of another tree, where I observed a considerable collection of worms on the trunk; but none that I could see had as yet ascended to the limbs: and this morning I observed that they had eaten many of the leaves on the first limb, below the sod, and were ascending in considerable numbers to it. None appeared on the rest of the limbs, though there is room enough for them to ascend without touching the sods.

I do not feel myself warranted in saying that such success will invariably follow this method of preserving our fruit trees; but the experiment is so easily made, that I think it well worth public attention.

N. C.

Whitehall, May 27, 1808.

COMPOSITION FOR HEALING WOUNDS IN TREES.

From the London "Repository of Arts, Literature, Commerce, Manufactures, Fashions and Politics, for March, 1809."

I have great satisfaction in submitting to my readers the following communication from Earl Stanhope, a nobleman, whose studies have been invariably directed towards the advancement of those branches of useful science, which tend more particularly to promote the welfare of mankind in general.

To the Editor of the Repository, &c.

Berner's Street, Feb. 13, 1809.

Sir,

The subject mentioned in your letter to me of yesterday's date, relative to the healing of wounded trees, is

certainly very interesting; I will therefore (agreeably to your wish) inform you of my success, and in what manner I have obtained it.

The injury which is done to timber trees, and other trees, from the loss of large branches, occasioned by wind, or otherwise, is much greater than people in general are aware of. Every attentive person may easily perceive the local injury which takes place at and near the wound, where the tree becomes evidently rotten; but there is, in addition thereto, a general injury to the tree, which is produced in the following manner. When wet gets in at the wounded part, it finds its way downwards, between the solid wood and the bark, through the capillary intervals where the sap rises. As the wet, so introduced, cannot get out, it frequently tends to cause the bark to decay at the bottom of the tree, just above, or at the top of the ground. The capillary attraction which causes the sap to rise, grows gradually weaker; the tree gets sickly; the tips of its upper boughs become rotten; and that fresh injury lets in more wet, which hastens the general decay: so that timber trees of the first size sometimes become hollow, or otherwise unsound, though the whole injury originated, perhaps, from the loss of a single large branch.

To remedy these evils, I have applied to the wounds a composition that I discovered many years ago, and which, when properly used, has succeeded even beyond my expectation; for not only the bark grows over the wounds, gradually pushing off the composition, but even the white wood, as it is commonly called, grows under the new bark, so as to produce a radical and a complete local cure. Whether the local cure thus accomplished, will, or will not, stop the general decay, which proceeds from the united causes I have alluded to, will depend upon the degree of general injury that the tree had received previous to the composition having been applied, and likewise on the number of small branches, or boughs, broken off; inasmuch as a tree can receive, in the man-

ner I have described, the same degree of general injury from several broken boughs, as it may from the loss of one branch of the largest dimensions. Wounds of an uncommon size in the bark of the trunk of the tree itself, have been completely healed by the same means. I have tried this plan on a great number of different sorts of trees, and I have always succeeded, if the composition was properly applied, and in due time: one application of the composition will frequently be quite sufficient, but some trees require it to be applied more than once. The elm, when very vigorous, is, generally speaking, of the latter description, on account of the great quantity of sap which weeps from its wounds, especially when the wounds are of a considerable size.

Oak, beech, chesnut, walnut, ash, elm, cedar, fir, asp, lime, sycamore, and birch trees, are, by an act of parliament of the 6th year of his present Majesty, deemed and taken to be timber trees; and by an act of the 13th of the king, poplar, alder, larch, maple, and horn-beam, are also deemed and taken to be timber trees. The trial has been made on the greater number of these seventeen sorts, as well as on yew, horse-chesnut, and apple trees, on various fruit and other trees, laurels, and shrubs.

If it be wished to saw the limb off, either close to the body of the tree, or near to it, great care should be taken that the separated limb, in falling, does not tear off the bark from the tree itself. This may be accomplished by first separating from the tree the greater part of the limb, and then taking off the remaining stump, and also by sawing the bark of the limb, completely all around before the wood itself is divided. If the limb be a very large one, a rope properly tied to it may be advantageously used, to prevent its injuring the tree at the moment of its being separated from it.

After the broken limb has been sawed off, the whole of the saw cut must be very carefully pared away, by means of a spoke-shaver, chisel, or other sharp tool;

and the rough edges of the bark must, in particular, be made quite smooth: the doing of this properly is of great consequence.

When the saw-cut is completely pared off, the composition hereafter mentioned must be laid on, hot, about the thickness of half a crown, over the wounded place, and over the edges of the surrounding bark: it should be spread with a hot trowel. The most convenient tool for this purpose, is a trowel somewhat similar in form to those used by plasterers, but of a greater thickness (such as of a quarter of an inch) in order to retain the heat the longer.

The healing composition is to be made as follows:— Take, of dry pounded chalk, three measures; and of common vegetable tar, one measure; mix them thoroughly, and boil them, with a low heat, till the composition becomes of the consistency of bees wax: it may be preserved for use, in this state, for any length of time. If chalk cannot conveniently be got, dry brick-dust, which has passed through a fine sieve, may be substituted.

I am, Sir,

Your obedient servant,

STANHOPE.

REMARKS BY THE EDITOR OF THE ARCHIVES.

The composition of Earl Stanhope, is certainly preferable to the celebrated one by Mr. Forsyth, of lime rubbish, cow manure, and bone dust, which is objectionable from the nature of one of the ingredients, from the difficulty and trouble in making enough of the last mentioned article, and from the frequent renewal which it requires, in rainy seasons. Many suppose that there is some particular healing or medicinal property in the composition; but that is not the case; its efficacy depends upon keeping out the air and wet, and any other preparation capable of doing that, will answer as well as that of Forsyth. Mr. Bucknal, a celebrated orchardist,

who had the care of the king's garden at Hampton Court, recommended tar and corrosive sublimate: I cannot see the utility of the latter ingredient.

FROM THE AMERICAN DAILY ADVERTISER.

PEACH TREES.

It is a matter of much regret to an observer to notice the decaying state of the Peach Trees in the vicinity of this city, and the probable loss of that charming fruit, unless some method is fallen on to prevent the ravages of the worm, which is destroying the trees. This is the time to examine them, which examination should be repeated again in the month of October. There is no difficulty in ascertaining whether the trees have worms in them, they soon shew it by the yellow cast of the leaves and the sickly appearance of the trees; whenever a tree puts on this appearance, by examining the trunk near the ground, a glutinous matter mixed with the excrement of the worm will be found on the bark, at the surface of the earth or a little above. A sharp pointed knife should be immediately used and the worm cut out by tracing him through the channels he makes between the wood and bark, which will generally be found to descend towards the roots.

Various methods have been tried; and among the experiments made to destroy the worms, putting ashes and lime around the roots, have had their full share of trial without success. There appears to be no other mode to prevent the ravages of the worm, but to keep off the wasp and grey miller, who deposit the egg; in almost every instance it will be found that the worm begins at the surface of the earth, where the bark is moist and easily penetrated by the sting of the insect in its winged state. I may say that it is a general rule, with only this exception, that if dead leaves or any similar substance becomes attached to any limb, by retaining moisture af-

ter rain, the bark becomes soft enough and proper for the use of the wasp, who will use that part as well as near the root.

The following modes of preserving the peach tree have been found the most successful—while the tree is young, get from the potters an earthen pot, open at both ends; by compressing the limbs of the tree draw it gently over to the ground—sink it three or four inches below the surface, having it sufficiently long to raise eight or ten inches above the ground, fill this up with coarse dry sand, free from mixture of loam or clay; the pot should be about ten inches in diameter. Where pots cannot be obtained, dig the earth away from the roots for about one foot around the tree, and put in coarse sand being careful to raise it in the form of a mound for eight or ten inches. The advantages of the sand are that being of a dry nature, the bark becomes too hard for the sting of the wasp, and if it succeeds to perforate the tree, as soon as the worm begins to work, the sand rolls in after him and strangles him in his hole, besides these advantages it is a well known fact, that peach trees always grow best in a sandy soil.

Another method which has been found to succeed, is to tie a coarse linen or matting round the trunks of the tsees, but this will answer no purpose unless the wrapper extends three or four inches under ground as well as above; to prove this, examine your trees and you will find that the seat of the mischief is from the surface to four or five inches below the earth.

Another reason why so many lose their peach trees is the neglect to trim them; they grow so very luxuriantly that unless they are properly trimmed, they quickly arrive at untimely old age; to trim the top into a round, bushy form is best.

As this is the season for budding or inoculation, the writer of this would particularly advise the budding to be done on the quickest growth *plumb stocks*, which is the most certain remedy against the worm. Let the bud

be put in about five or six inches from the ground, which will prevent in a great measure the evil which may occur from the peach out growing the plumb stock; almond stocks will also answer well to put in peach buds

The writer of this would propose the following question, which he hopes to see answered: What is the best method of preventing the ravages of the Curculio or small insect, which stings and destroys the fruit of our peach and plumb trees just before it ripens?

A LOVER OF GOOD FRUIT.

DIRECTIONS FOR RAISING FLAX ON OLD GROUND.

From the American Museum.

Let your land run over with grass, until the month of June; then plough it in, and dung the ground with sheep's dung, or yard your sheep upon it; plough it eight or nine times more before winter. Early in the succeeding spring, plough it three times more, and at the last time, plough in your seed with some ashes, if you have any; roll a roller over the ground, to beat it down hard, and make it smooth.

To impregnate the ground with nitrous salts, and generate proper nourishment for the growth of the flax, let the ploughing be done early in the morning, before the dew is off by the exhalation of the sun. Wet land, where the water stands in the spring, or after a heavy rain, ought not to be ploughed until it is dry.

The ploughing of the land often prevents the generation of devouring insects. Part of the ground may be sown as early as the season will admit, and the rest at or near the full moon in May; you may expect a good crop from both parts; but if one should fail, you will, in all probability, have a good one from the other.

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